E/C

Service Manual

FOBRITE

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General Installation Check List

Water Pressure	Minimum 25 PSI
Electrical Supply	Uninterrupted AC.Check voltage compatibility
Plumbing	Free of any deposits or build-ups inside pipes
Softener	Locate close to drain and connect according to plumbing codes
Bypass Valves	Always provide for bypass valve if unit is not equipped with one
	CAUTION
	¤ Do not exceed 120 PSI water pressure
	¤ Do not exceed 100°F(40°C)water temperature
	¤ Do not operate unit in freezing conditions

General Valve Installation Procedure

Note: Install the water softener with the inlet, outlet and drain connections made according to manufacturer's recommendations and to meet applicable plumbing codes.

1. Locate the softener tank close to a drain where you wish to install the unit.
   Note: Be sure the tank is level and on a firm base.

2. Perform all plumbing according to local plumbing codes.
   — Use a 1/2" minimum pipe size for the drain.
   — Use a 3/4" drain line for backwash flow rates that exceed 7 gpm or length that exceeds 20′ (6 m).

3. Cut the 1" distributor tube (1.050 O.D.) flush with top of each tank.
   Note: Only use silicone lubricant.

4. Lubricate the distributor o-ring seal and tank o-ring seal. Screw the valve on to the tank.

5. Use only Teflon tape on the drain fitting. Solder joints near the valve must be done before connecting any piping to the valve.
   Always leave at least 6" (152 mm) between the valve and solder joints when soldering pipes that are connected to the valve. Failure to do this could cause damage to the valve.

6. Be sure the floor under the brine tank is clean and level.

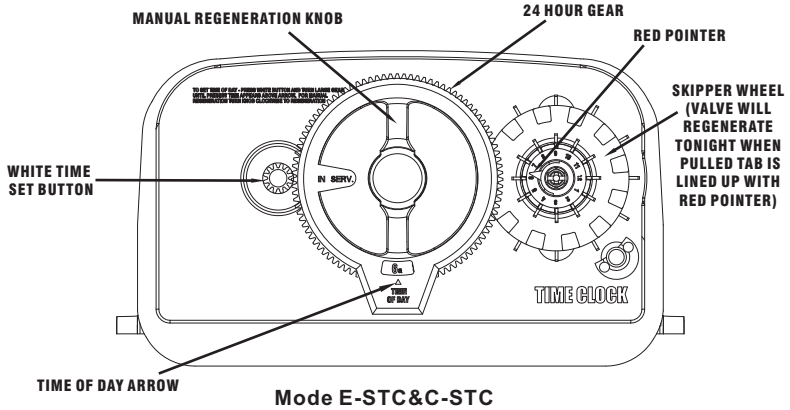
7. Add water until there is approximately 1" (25 mm) of water above the grid plate. If a grid is not utilized, fill to the top of the air check in the brine tank. Do not add salt to the brine tank at this time.

8. On units with a bypass, place in Bypass position.
   — Turn on the main water supply.
   — Open a cold soft water tap nearby and let water run a few minutes or until the system is free of foreign material (usually solder)resulting from the installation. Close the water tap when water runs clean.

9. Place the bypass in the In Service position and let water flow into the mineral tank. When water flow stops, slowly open a cold water tap nearby and let water run until air is purged from the unit. Then close tap.

10.Plug the valve into an approved power source.

STC Timer Control Valve Start-up Procedure


MANUAL REGENERATION KNOB
24 HOUR GEAR
RED POINTER
SKIPPER WHEEL (VALVE WILL REGENERATE TONIGHT WHEN PULLED TAB IS LINED UP WITH RED POINTER)
WHITE TIME SET BUTTON
IN SERV.
TIME OF DAY
TIME CLOCK
TIME OF DAY ARROW

Mode E-STC&C-STC

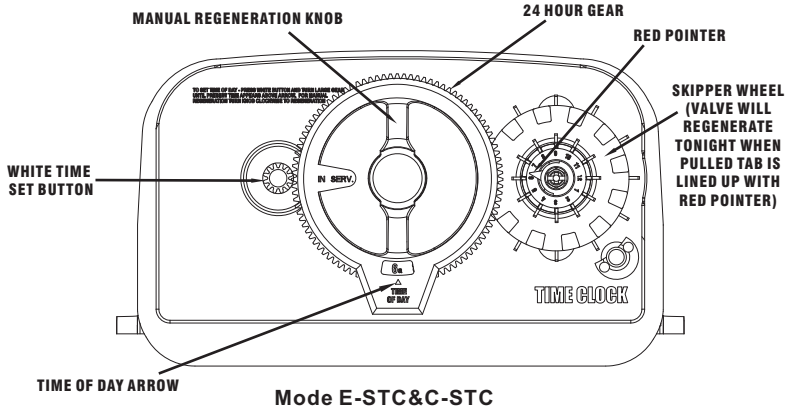
Before Plugging In The Unit

1. Set the Knob to the "In Service" position, and bring water into the mineral tank by rotating the Knob on the front of the unit clockwise until the desired position appears. When water flow stops, open a downstream faucet until all air is released. Then close the faucet.
2. Set the Knob to the"Backwash"position by turning it clockwise and allow water to flow to the drain for a minutes.
3. Remove the back cover plate to access the salt settings. Make any adjustments as necessary according to the Softener Timer Regeneration Reference Chart below.
4. Set the Knob to the"BrineFill"position by turning it clockwise and allow the brine tank to fill to the top of the air tank.
5. Set the Knob to "Brine Draw" position by turning it clockwise to draw the water from the brine tank until it stops.
6. Connect unit to approved power source. Make sure the motor is running by looking in the sight hole on the back of the motor.
7. Set the days that regeneration is to occur by pulling regeneration tabs up .Each tab represents a single day. The tab at the Indicator is the next scheduled regeneration.
8. Moving clockwise from the Indicator, pull appropriate tabs to gain the desired regeneration schedule.
9. Set the Knob to the "Brine Fill"position by turning it clockwise and allow the unit to return to the "In Service"position on its own.
10. Add salt into brine tank until full.
11. Reattach control valve back cover.
12. Double check that the bypass valve is in the normal open position.

Softeners	Hardness PPM (GPG)	17-85 (1-5)	86-170 (6-10)	171-256 (11-15)	257-342 (16-20)	343-427 (21-25)	428-513 (26-30)	514-598 (31-35)	599-684 (36-40)	685-769 (41-45)	770-855 (46-50)	856-940 (51-55)	941-1026 (56-60)	1027-1111 (61-65)	1112-1197 (66-70)	1198-1282 (71-75)	1283-1368 (76-80)
	No. Of Persons	Calender Clock Regenerations Frequency - No. Of Tab Pull Upwards															
	2	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3
	3	1	1	2	2	3	3	3	3	3	3	4	4	4	4	4	4
	4	1	2	2	2	3	3	3	4	4	4	6	6	6	6	6	6
	5	2	2	3	3	4	4	4	4	6	6	6	6	12	12	12	12
	6	2	2	3	3	4	4	4	6	6	6	6	12	12	12	12	12
	7	2	3	3	4	4	6	6	6	12	12	12	12	12	12	12	12
	8	2	3	3	4	6	6	6	6	12	12	12	12	12	12	12	12
	9	3	3	4	4	6	6	12	12	12	12	12	12	12	12	12	12
	10	3	4	4	6	6	12	12	12	12	12	12	12	12	12	12	12

Softener Timer Regeneration Reference Chart

FTC Backwash Filter Valve Start-up Procedure


MANUAL REGENERATION KNOB
24 HOUR GEAR
RED POINTER
SKIPPER WHEEL (VALVE WILL REGENERATE TONIGHT WHEN PULLED TAB IS LINED UP WITH RED POINTER)
WHITE TIME SET BUTTON
IN SERV.
TIME OF DAY
TIME CLOCK
TIME OF DAY ARROW

Mode E-STC&C-STC

Before Plugging In The Unit

1. Open an in-line faucet downstream from the unit.
2. Set the Knob to the "In Service"position and carefully fill the mineral tanks by slowly opening the main water supply line. Any bypass should also be in the"In Service" position.

   Note: Allow the water flowing from the downstream faucet to run until it appears clean and free of air.
3. When a steady flow of clean water appears,close the faucet and the main water supply line and wait 15–20 minutes for Setting of the media.
4. Setting the Knob by turning it clockwise to the "Backwash" position.
5. Partially open the main water supply line si that the drain flow of the unit is approximately 1 gpm (3.7 Lpm). This should prevent a sudden surge of air and water. Allow drain water from the unit to Flow until it appears clean and free of air.
6. Continue to slowly open the water supply line until it is completely open. Again, allow the drain water from the unit free of all media particles.
7. Set the Knob by turning it clockwise to the "In Service" position, and reopen the downstream faucet. Allow water to flow until water is clean and clear of all media. If tap is aerator equipped, make sure aerator is no plugged.
8. Connect unit to approved power source (make sure the motor is running by looking in the sight hole on the back of the motor) .
9. Set the day that regeneration is to occur by pulling regeneration tabs up. Each tab represents a single day. The tab at the indicator is the next scheduled regeneration. Refer to the Filter Timer Regeneration Reference Chart below.
10. Moving the clockwise from the Indicator, pull the appropriate tabs to gain the desired regeneration schedule.
11. Set time of day by pressing and holding in Time Set Button and turning the Knob's outer gear clockwise until the current time of day is shown above the time of day arrow.

Sand Filter	Sediment Turbidity	Mild					Average					Extreme					
Activated Carbon Filters	Taste Odor	Mild					Average					Extreme					
Iron Filters	PPM IronX1 PPM ManganeseX1 PPM SulphurX1	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
	No. Of Persons	Calender Clock Regenerations Frequency - No. Of Tab Pull Upwards															
	2	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3
	3	1	1	2	2	3	3	3	3	3	3	4	4	4	4	4	4
	4	1	2	2	2	3	3	3	4	4	4	6	6	6	6	6	6
	5	2	2	3	3	4	4	4	4	6	6	6	6	12	12	12	12
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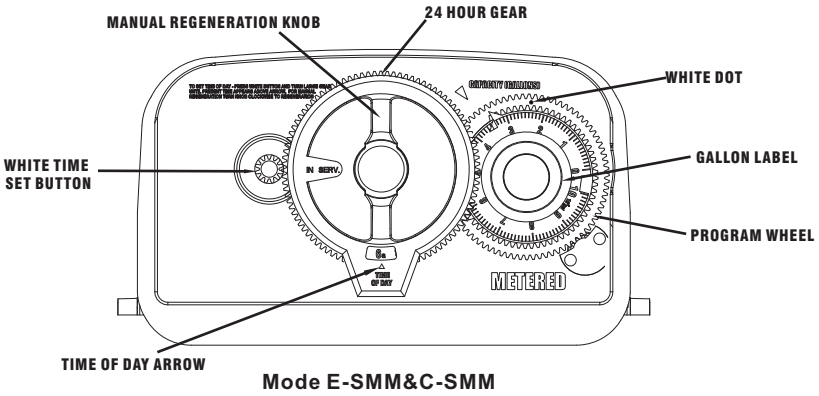
	9	3	3	4	4	6	6	6	12	12	12	12	12	12	12	12	12
	10	3	4	4	6	6	12	12	12	12	12	12	12	12	12	12	12

Filter Timer Regeneration Reference Chart

SMM Meter Control Valve Start-up Procedure



Mode E-SMM&C-SMM

Before Plugging In The Unit

1. Set the Knob to the "In Service"position, and bring water into the mineral tank by rotating the Knob clockwise until the desired position appears.

2. To set the water usage and to calculate the proper setting, you must know the following.
   a. Your water hardness and iron level.
   b. Capacity of your mineral tank. Ex.(9×48)holds one cubic foot for a max. capacity of 32,000 grains removal.(The system should e sized to work at 75% capacity)

3. Calculate the gallon setting which is the grains removal multiplied by 75%; then divided by the hardness in grains. Then subtract 75 gallons for each person in the residence. Finally divide by 100 to get the proper setting.
   Example: 32,000 grains removal x.75=24,000/20grains hardness =1200 gal.-150(two People)=1050.
   1050/100=10. Pull the Selector Wheel out and turn it to 10 which would be the proper setting.

4. Continue holding the Selector Wheel out and advance the Regeneration Dial gear counterclockwise until it stops at the regeneration position.

5. Set the knob to the "Backwash" position by turning it clockwise and allow water to flow to the drain for a few minutes.

6. Remove the back cover plate to access the salt settings. Make any adjustments as necessary. Refer to the Softener Water Capacity Reference Chart below.

7. Set the Knob plate to the "Brine Fill"position by turning it clockwise and allow the brine tank to fill to the top of the air check.

8. Set the Knob by turning it clockwise to the "Brine Draw" position to draw the water from the brine tank until it stops.

9. Connect unit to approved power source(make sure the motor is running by looking in the sight hole on the back of the motor).

10. Set the Knob to the"Brnie Fill"position by turning it clockwise and and allow the unit to return to the "In Service"position on its own.

SMM Meter Control Valve Start-up Procedure

11.Add salt into brine tank until full.

12.Reattach control valve back cover.

13.Double check that the bypass valve is in the normal open position.

Capacity 18,000		Hardness PPM (GPG)						
		85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)
No. Of Persons	1	2,100	1,725	1,125	825	525	375	285
	2	2,100	1,650	1,050	750	450	300	210
	3	2,100	1,575	975	675	375	225	135
	4	2,100	1,500	900	600	300	150	60
	5	2,100	1,425	825	525	225	75	0
	6	2,100	1,350	750	450	150	0	0

Capacity 30,000		Hardness PPM (GPG)						
		85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)
No. Of Persons	1	2,100	2,100	1,925	1,425	925	675	525
	2	2,100	2,100	1,850	1,350	850	600	450
	3	2,100	2,100	1,775	1,275	775	525	375
	4	2,100	2,100	1,700	1,200	700	450	300
	5	2,100	2,100	1,625	1,125	625	375	225
	6	2,100	2,100	1,550	1,050	550	300	150

Capacity 24,000		Hardness PPM (GPG)						
		85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)
No. Of Persons	1	2,100	2,100	1,525	1,125	725	525	405
	2	2,100	2,100	1,450	1,050	650	450	330
	3	2,100	2,100	1,375	975	575	375	255
	4	2,100	2,100	1,300	900	500	300	180
	5	2,100	2,025	1,225	825	425	225	105
	6	2,100	1,950	1,150	750	350	150	30

Capacity 36,000		Hardness PPM (GPG)						
		85(5)	171(10)	256(15)	342(20)	513(30)	684(40)	855(50)
No. Of Persons	1	2,100	2,100	2,100	1,725	1,125	825	645
	2	2,100	2,100	2,100	1,650	1,050	750	570
	3	2,100	2,100	2,100	1,575	975	675	495
	4	2,100	2,100	2,100	1,500	900	600	420
	5	2,100	2,100	2,025	1,425	825	525	345
	6	2,100	2,100	1,950	1,350	750	450	270

Softener Meter Capacity Reference Chart (Gallons)

Capacity 18,000								
No. Of Persons	1	555	456	297	218	139	99	75
	2	555	436	277	198	119	79	55
	3	555	416	258	178	99	59	36
	4	555	396	238	159	79	40	16
	5	555	376	218	139	59	20	0
	6	555	357	198	119	40	0	0

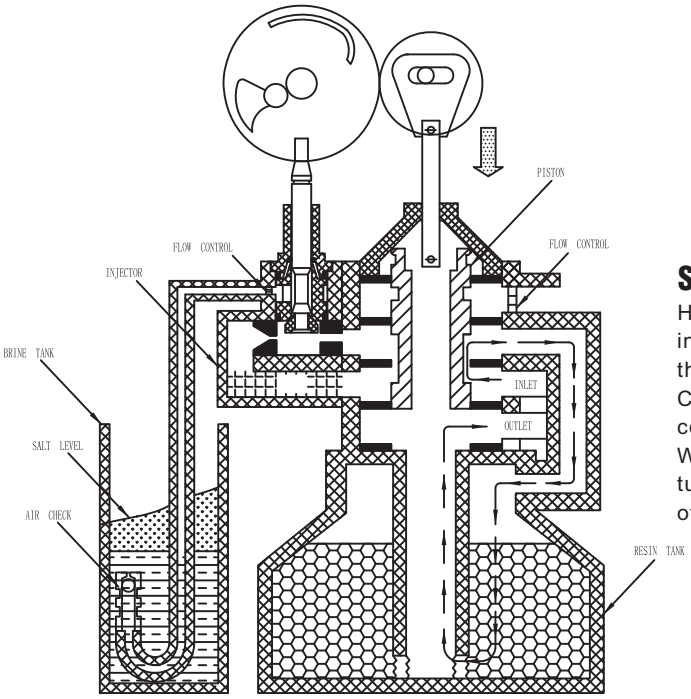
Capacity 30,000								
No. Of Persons	1	555	555	509	376	244	178	139
	2	555	555	489	357	225	159	119
	3	555	555	469	337	205	139	99
	4	555	555	449	317	185	119	79
	5	555	555	429	297	165	99	59
	6	555	555	410	277	145	79	40

Capacity 24,000								
No. Of Persons	1	555	555	403	297	192	139	107
	2	555	555	383	277	172	119	87
	3	555	555	363	258	152	99	67
	4	555	555	343	238	132	79	48
	5	555	535	324	218	112	59	28
	6	555	515	304	198	92	40	8

Capacity 36,000								
No. Of Persons	1	555	555	555	456	297	218	170
	2	555	555	555	436	277	198	151
	3	555	555	555	416	258	178	131
	4	555	555	555	396	238	159	111
	5	555	555	535	376	218	139	91
	6	555	555	515	357	198	119	71

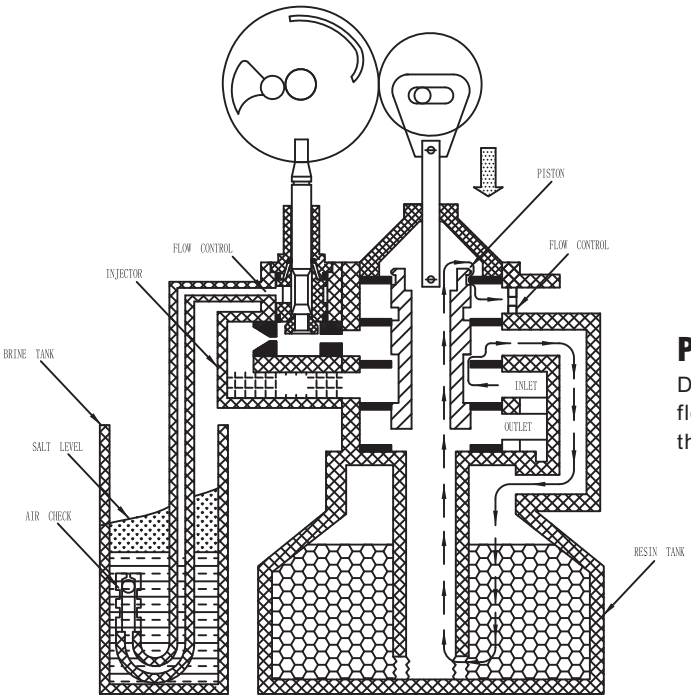
Softener Meter Capacity Reference Chart (L)

Flow Diagram



Service (In Use)Mode

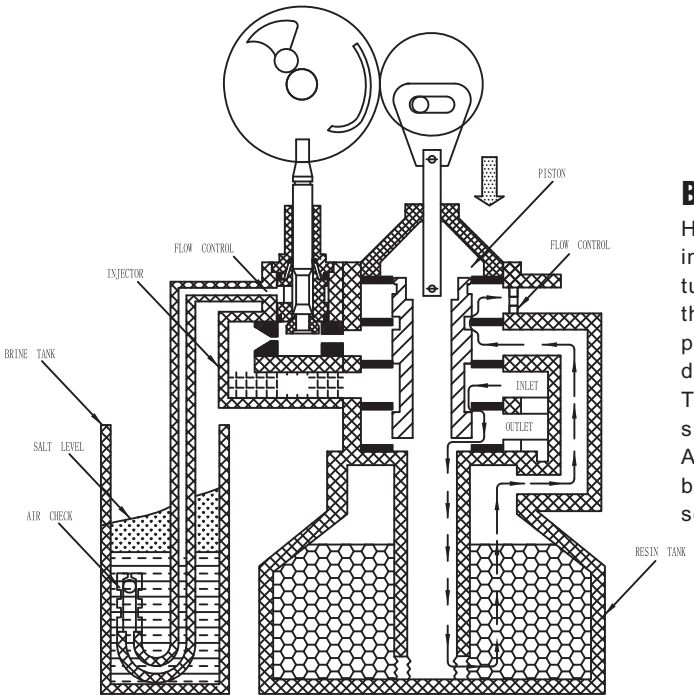
Hard water enters unit through the valve inlet and flows down through the media in the mineral tank.
Conditioned water enters the distributor connected to the center tube at the bottom. Water then flows up through the center tube, around the piston, and exits the outlet of the valve.



Pre Rinse Mode

During slow rinse of the resin bed. Water flows down through the media, up through the distributor and out the drain.

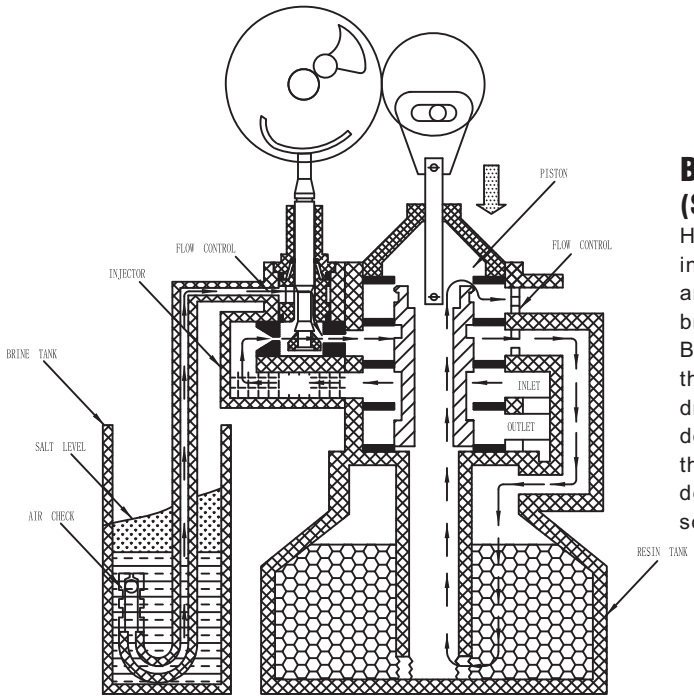
Flow Diagram



Backwash Rinse Mode

Hard water enters unit through the valve inlet, flows through piston, down center tube, through the distributor at the bottom, then up through the media, around the piston and out the drain line. and out the drain line.

This is opposite of normal flow to flush suspended deposits out of the resin tank. A secondary purpose is to loosen the resin bed which will become compacted during service.



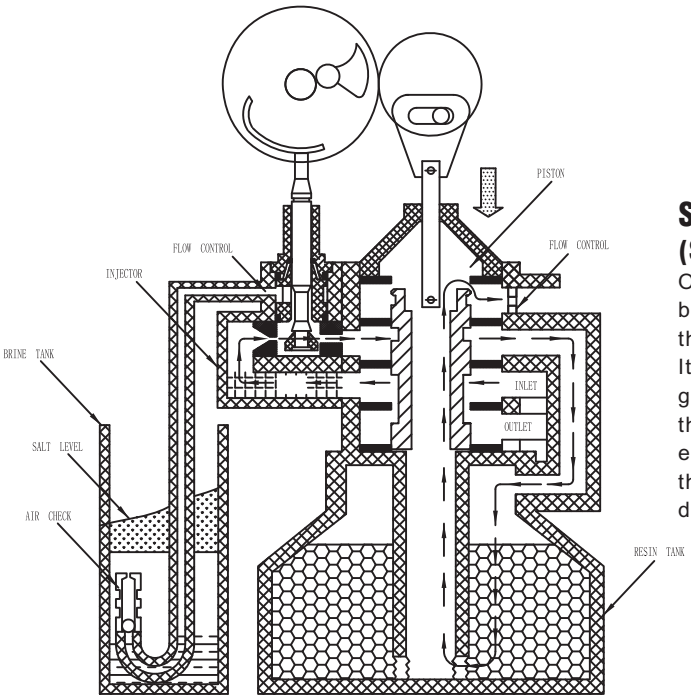
Brine Rinse Mode

(Softeners Only)

Hard water enters unit through the valve inlet, it then flows up into injector housing and down the nozzle and throat to draw brine from the brine tank.

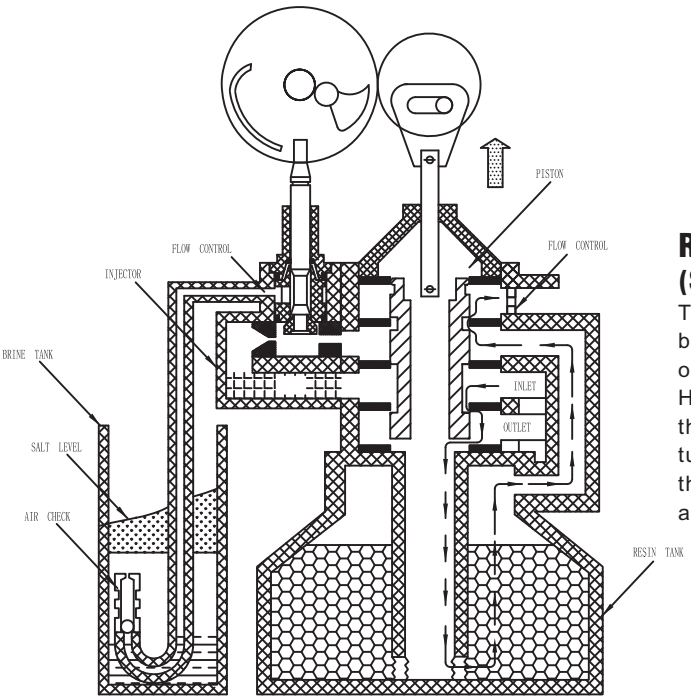
Brine flows down through the media into the distributor at the bottom and out the drain line. This cleans the resin bed of deposits by releasing the charge held by them to attract the mineral and iron deposits naturally found in the water source.

Flow Diagram



Slow Rinse Mode
(Softeners Only)

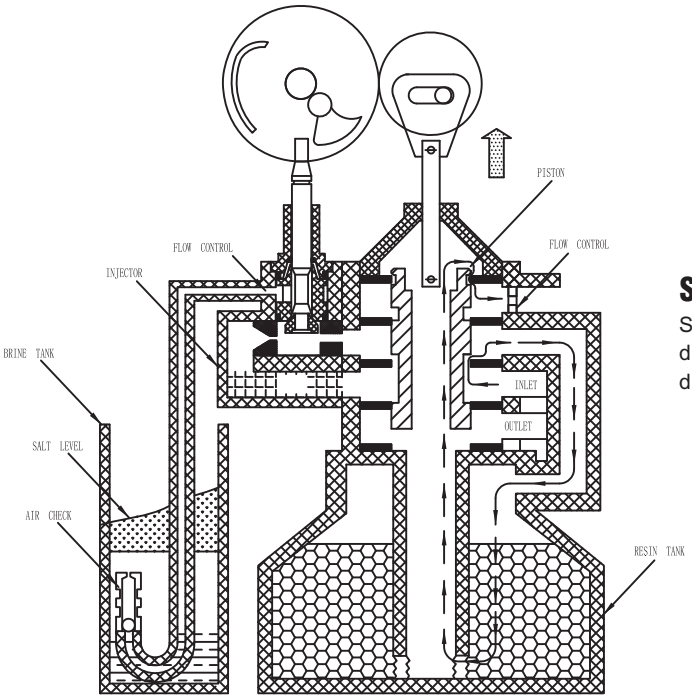
Once the brine has been drawn from the brine tank hard water continues to enter through the inlet valve.
It then flows around the lower piston groove, and through the nozzle and throat, down through the media. It then enters the distributor and travels through the center hole in the piston and out the drain line.



Rapid Rinse Mode
(Second Backwash)

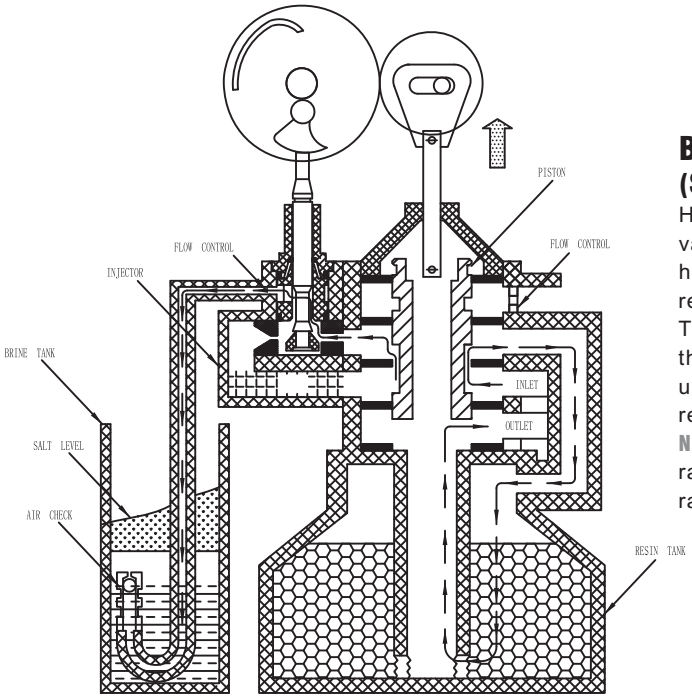
The media is rinsed to remove excess brine from the tank so the resin beads are once again ready to produce soft water.
Hard water enters unit through inlet valve, then flows through piston, down center tube, through bottom distributor, up through the media, then around the piston and out the drain line.

Flow Diagram



Settling Rinse Mode

Slow rinse of the resin bed. Water flows down through the resin bed up the bottom distributor and out the drain.



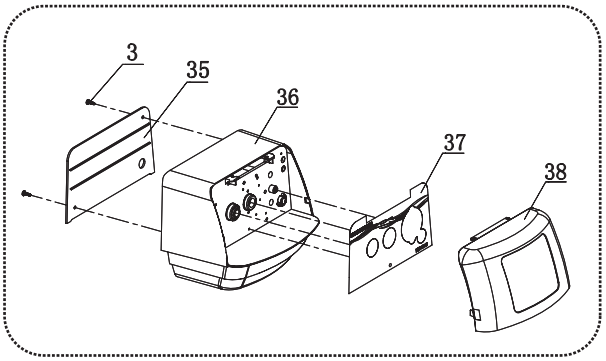
Brine Tank Fill Mode
(Softeners Only)

Hard water enters unit through the inlet valve, then flows up through the injector housing, and through the brine valve to refill the brine tank.

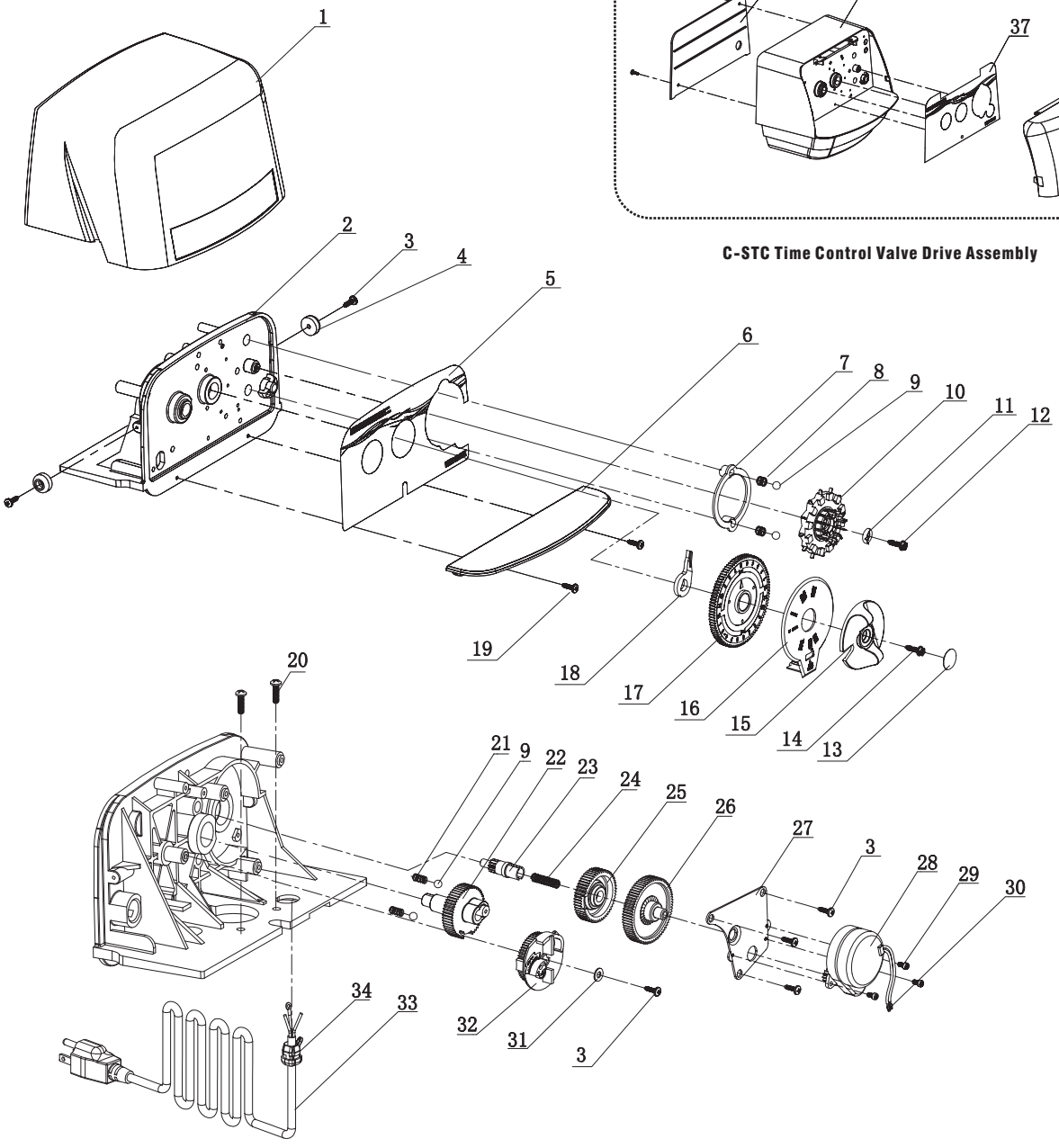
The system is now delivering soft water to the home. The brine tanks fills with untreated water is preparation for the next regeneration cycle.

Note: When the valve is in Regeneration, raw water is being passed to service until rapid rinse is complete.

STC Drive Assembly



C-STC Time Control Valve Drive Assembly



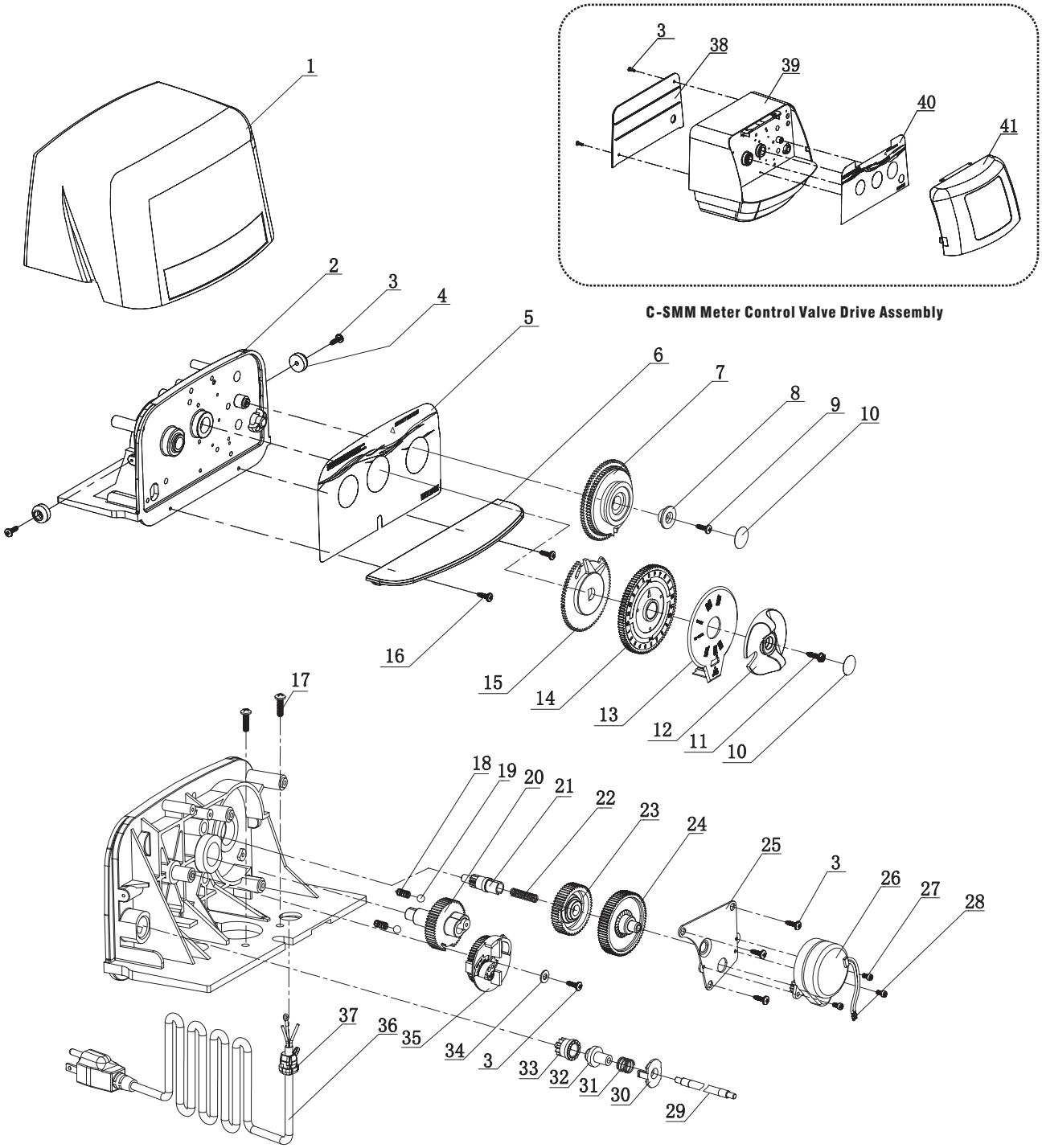
E-STC Time Control Valve Drive Assembly

STC Drive Assembly (Continued)

Item No.	Quantity	Part No.	Description
1	1	56205	Housing
2	1	66168	Bracket Assembly
3	6	02106	Screw
4	2	56229	Rubber Pad
5	1	56281	Front Label(E Timer)
6	1	56216	Dust proof Plate
7	1	13208	Skipper Wheel Ring
8	2	13254	Spring, Detent, Skipper Wheel
9	4	09001	Ball
10	1	66109	Skipper Wheel Assembly, 12-Day
11	1	13210	Regeneration Pointer
12	1	02107	Screw, Skipper Wheel Assembly
13	1	13281	Cover Label
14	1	02103	Screw, Knob
15	1	56215	Knob, Manual Regeneration
16	2	15605-1	Valve Position Dial, Standard
		15605-2	Valve Position Dial, Filter
17	1	66115	24-hour Gear Assembly, Silver
18	1	13211	Cycle Actuator Gear
19	2	02004	Screw
20	2	02002	Screw-Driver Mounting
21	2	13252	Spring, Detent, Main Gear
22	1	15601	Main Gear and Shaft
23	1	13206	Idler Pointer
24	1	13253	Spring Idler
25	1	13204	Drive Gear
26	1	13205	Idler Gear
27	1	15650	Motor Mounting Plate
※ 28	1		Motor
29	2-3	02008	Screw, Motor mtg. and Ground wire
30	2	07002	Wire Connector
31	1	04003	Washer
32	1	66112	Brine Cam Assembly, 3.5-15lbs
		66113	Brine Cam Assembly, 7-30lbs
		66114	Brine Cam Assembly, 4-16kg
※ 33	1		Electrical Cord
34	1	07003	Strain Relief
35	1	56203	Back Plate
36	1	66169	Housing Assembly
37	1	56283	Front Label(C Timer)
38	1	56202	Front Cover

※ For more options

SMM Drive Assembly



C-SMM Meter Control Valve Drive Assembly

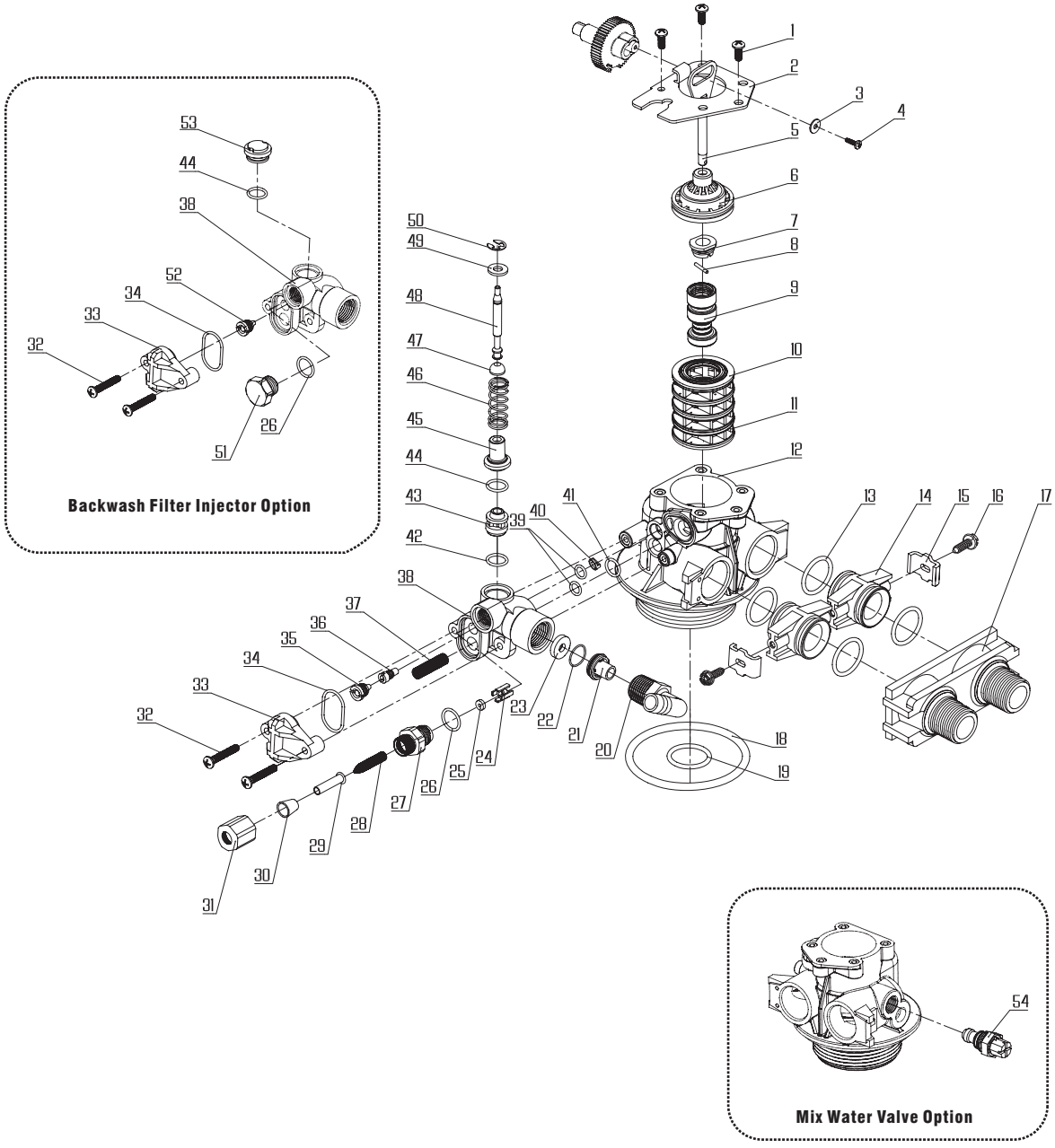
E-SMM Meter Control Valve Drive Assembly

SMM Drive Assembly(Continued)

Item No.	Quantity	Part No.	Description
1	1	56205	Housing, With Pin
2	1	66168	Bracket Assembly
3	6	02106	Screw
4	2	56229	Rubber Pad
5	1	56282	Front Label(E Meter)
6	1	56216	Dust proof Plate
7	1	66116	Program Skipper Wheel Assembly
8	1	13109	Program Wheel Retainer
9	1	02107	Screw
10	2	13281	Cover Label
11	1	02103	Screw, Knob
12	1	56215	Knob, Manual Regeneration
13	2	15605-1	Valve Position Dial, Standard
		15605-2	Valve Position Dial, Fliter
14	1	66115	24-hour Gear Assembly, Silver
15	1	15608	Cycle Actuator Gear
16	2	02004	Screw
17	2	02002	Screw-Driver Mounting
18	2	13252	Spring, Detent, Main Gear
19	2	09001	Ball
20	1	15601	Main Gear and Shaft
21	1	13206	Idler Pointer
22	1	13253	Spring Idler
23	1	13204	Drive Gear
24	1	13205	Idler Gear
25	1	15650	Motor Mounting Plate
※ 26	1		Motor
27	2-3	02008	Screw, Motor mtg. and Ground wire
28	2	07002	Wire Connector
29	1	12151	Cable Assembly
30	1	13106	Spring Retainer
31	1	13151	Spring
32	1	13107	Clutch, Drive Pinion
33	1	56206	Drive Pinion, Program Wheel
34	1	04003	Washer
35	1	66112	Brine Cam Assembly, 3.5-15lbs
		66113	Brine Cam Assembly, 7-30lbs
		66114	Brine Cam Assembly, 4-16kg
※ 36	1		Electrical Cord
37	1	07003	Strain Relief
38	1	56203	Back Plate
39	1	66169	Housing Assembly
40	1	56284	Front Label(C Meter)
41	1	56202	Front Cover

※ For more options

Valve Assembly

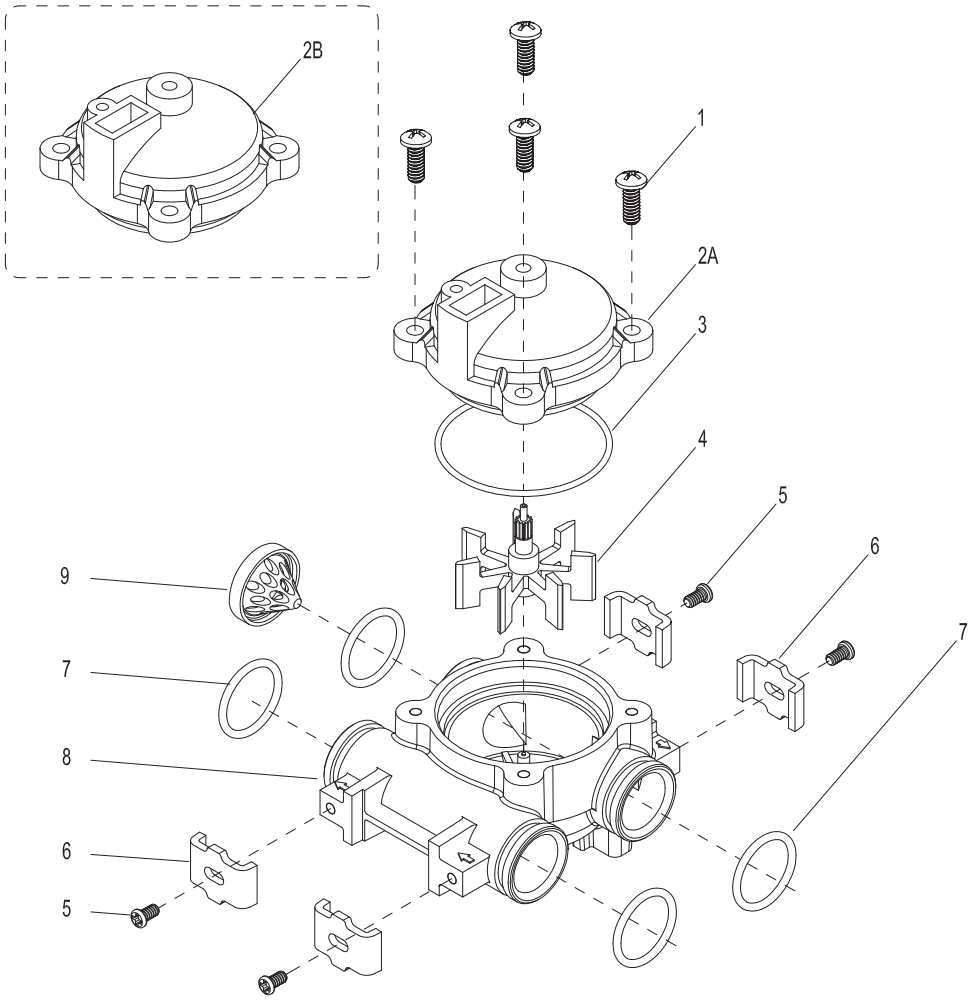


Valve Assembly(Continued)

Item No.	Quantity	Part No.	Description
1	3	02001	Screw
2	1	56050	End Plug Retainer
3	1	04002	Washer
4	1	02106	Screw
5	1	66117	Piston Rod Assembly
6	1	66118	End Plug Assembly
7	1	56006	Piston Retainer
8	1	00101	Piston Pin
9	1	56053-1	Piston, Softener
		56150-1	Piston, Filter
10	5	56033	Seal
11	4	56004	Spacer
12	1	56001-1	Valve Body Assembly
13	4	01013	O-ring,Adapter Coupling
14	2	56017	Adapter Coupling
15	2-4	56051	Adapter Clip
16	2-4	02105	Screw, Adapter Coupling
※ 17	1		Yoke, Plastic
18	1	01007	O-ring,Top of tank
19	1	01102	O-ring,Distributor Tube
20	1	56011	Draine House Barb
21	1	56012	DLFC Button Retainer
22	1	01101	O-ring,DLFC
※ 23	1		DLFC Button
24	1	56015	BLFC Button Retainer
※ 25	1		BLFC Button
26	1	01004	O-ring,BLFC
27	1	56056	BLFC Fitting
28	1	56060	Screen, Brine Line
29	1	56062	BLFC Tube Insert
30	1	56023	BLFC Ferrule
31	1	56061	BLFC Fitting Nut
32	2	02003	Screw Injector Mounting
33	1	56003	Injector Cover
34	1	01005	O-ring,Injector Cover
※ 35	1		Injector Nozzle
※ 36	1		Injector Throat
37	1	56059	Screen, Injector
38	1	56002	Injector Body
39	2	01002	O-ring Injector
40	1	56014	Air Disperser
41	1	01006	O-ring,Drain
42	1	01105	O-ring
43	1	56010	Brine Valve Spacer
44	1	01003	O-ring,Brine Valve
45	1	66119	Brine Valve Cap Assembly
46	1	56058	Spring, Brine Valve
47	1	56030	Brine Valve Seat
48	1	56054-1	Brine Valve Stem
49	1	04001	Washer, Brine Valve
50	1	04053	Retaining Ring
▲ 51	1	56102	BLFC ,Plug
▲ 52	1	56104	Injector Nozzle-Undrilled
▲ 53	1	56101	Brine Valve, Plug
54	1	66500	Mix Water Valve Assembly

▲Only used in Filter
※For more options

Meter Assembly



Item No.	Quantity	Part No.	Description
1	4	02082	Screw, Meter Cover Assembly
2A	1	66120A	Meter Cover Assembly,10600gal
2B	1	66120B	Meter Cover Assembly, 2100gal
3	1	01015	O-ring,Meter Cover Assembly
4	1	12204A	Impeller
5	4	02105	Screw, Adapter Clip
6	4	56051	Adapter Clip
7	4	01013	O-ring,Meter Body
8	1	12201	Meter Body
9	1	56013	Flow Straightener

NOTES

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